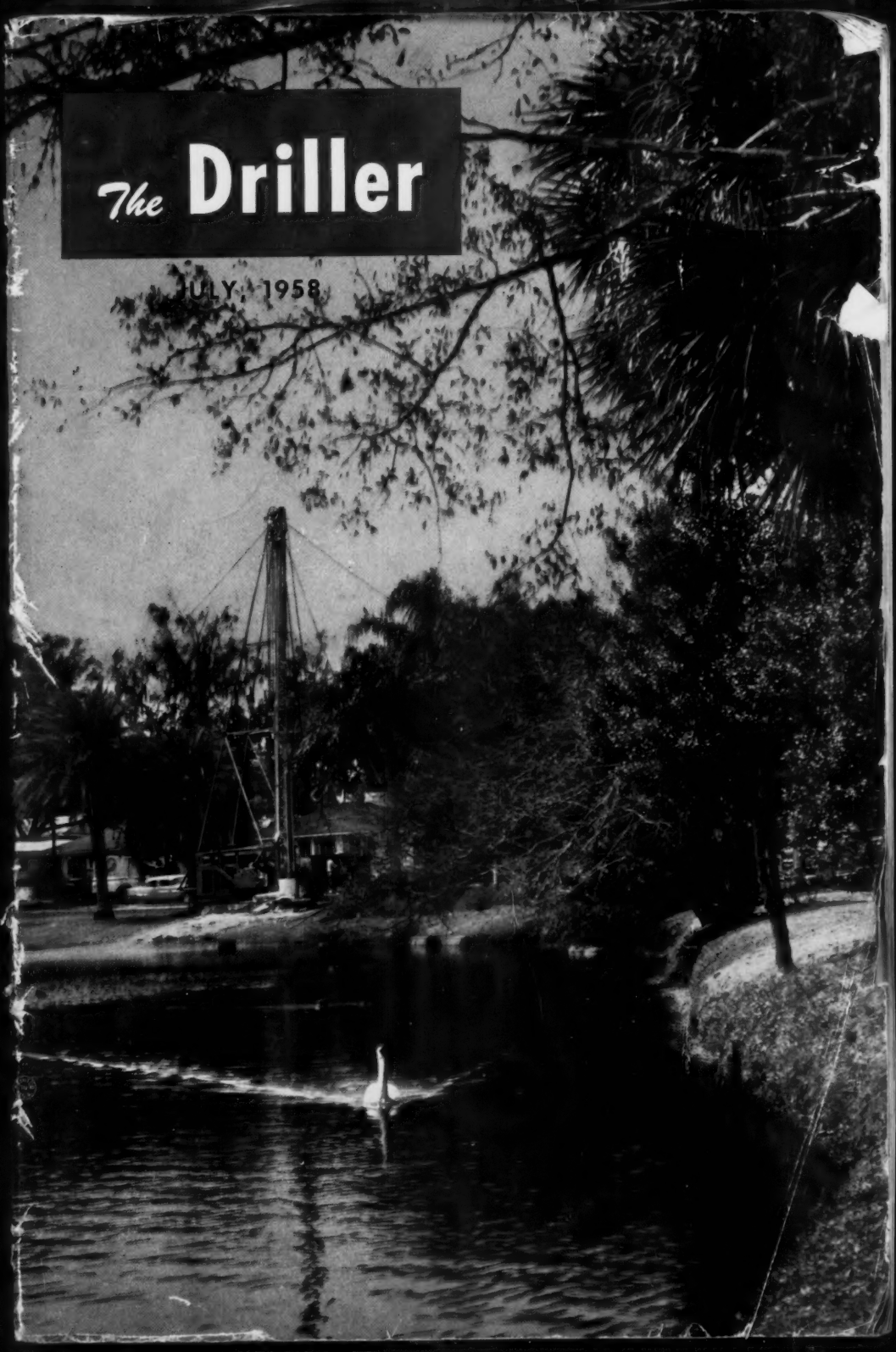
The Driller
JULY 1958

Survey Proof!

Drillers Prefer Bucyrus-Eries 4 to 1 as BEST ALL-ROUND!

Based on results of a recent survey conducted by an independent research bureau, we've already reported that Bucyrus-Erie drills are favored —

2 to 1 over all other makes combined!
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And, the survey shows it's
4 to 1 as BEST ALL-ROUND!

As Drilling Contractor Howard M. White, of Waterloo, Iowa, puts it:

"They're the best in the industry because they're quality built and get a good price with age. They're tops! From sand line to bull reel to crown sheaves, these rigs function well. The levers are easy to operate and simply located. You get plenty of power when you need it. They're sturdily constructed, compact, and mobile rigs. And I sure do love that automatic feed on the bull reel. You get a lot more footage when you let the automatic feed hand off the line instead of fighting it all the way."

FIRST CHOICE of thousands of contractors in all parts of the world, Bucyrus-Eries give you many other BEST ALL-ROUND advantages, including: simple quick rig-ups with power derrick hoist, telescoping two-piece derricks and folding tubular braces; sharp penetrating drilling motion with the famous Bucyrus-Erie rubber-cushion shock absorber in the derrick head, smooth transmission of power, and low upkeep with moving parts mounted in anti-friction bearings.

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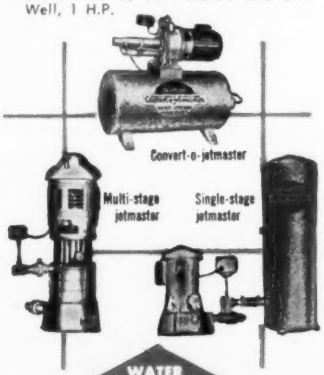

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(or you who could be using it)

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WHEN don't I use it? We do not recommend Supplex Plastic Pipe for use with temperatures higher than 125° F. nor jet wells deeper than 125 ft. Make American Hard Rubber your *one* source of supply for all types of plastic pipe—the right pipe for the job.

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The Driller

South Milwaukee, Wisconsin

Vol. 32 No. 7

July 1958

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3/4 and 1 HORSEPOWER FOR . . .

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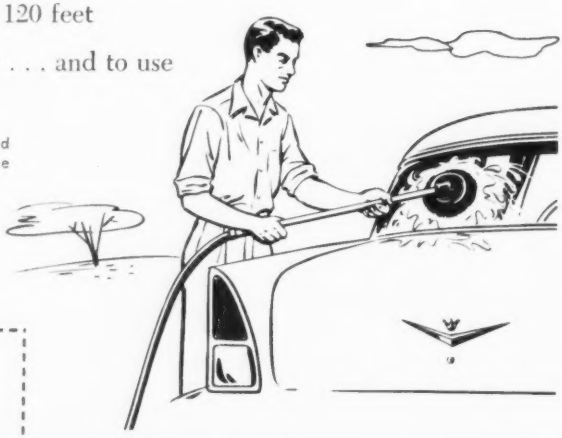

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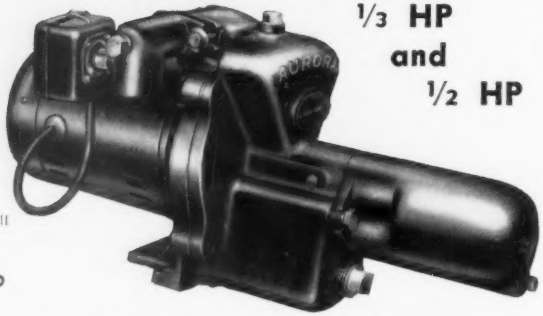

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Note how unit is mounted vertically on adaptor for simple, sturdy, lasting offset mounting. Star-Liner performance meets the most exacting requirements of both installer and user.

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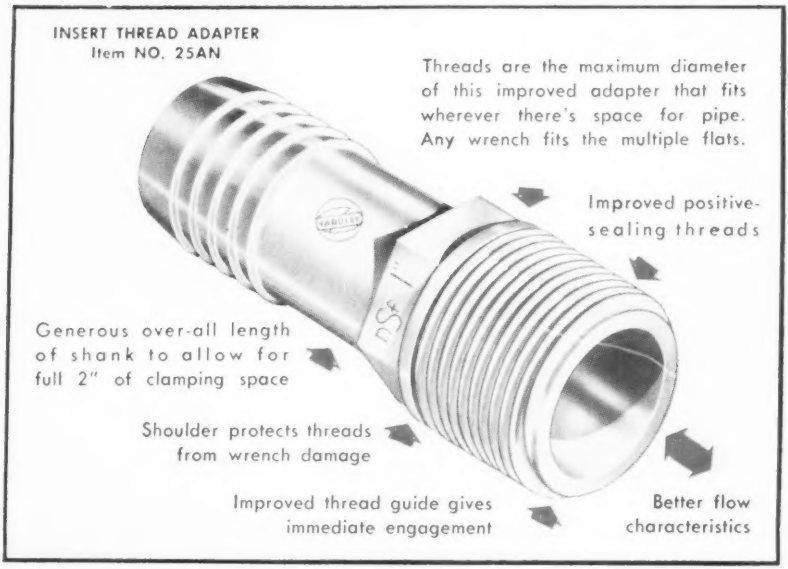
YARDLEY *improved*
NYLON INSERT FITTINGS

for use with flexible plastic pipe


INSERT THREAD ADAPTER
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Threads are the maximum diameter of this improved adapter that fits wherever there's space for pipe. Any wrench fits the multiple flats.
Improved positive-sealing threads
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Yardley insert-type fittings, for use with flexible polyethylene pipe, are available in sizes ranging from ½" to 2". They are also available in high-impact styrene, approved by the National Sanitation Foundation.

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And you know—he was right! There just aren't any pumps better than Aermotor's.

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Sound interesting? You bet it does. Get smart (like I did) and send Aermotor a post card with your name on it. A Representative will call on you and explain the benefits of an Aermotor Franchise in your territory. And there's no obligation, either. Don't forget . . . mail that post card to:

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For longer wire line life and lower drilling costs, specify "Hi-Lastic" for the jobs ahead. Your Macwhyte distributor stocks it in 5/8", 3/4", and 7/8" diameters. Ask for circular 5813.

"Macwhyte Hi-Lastic takes pounding yet strands don't come loose, like on other ropes," says Arthur J. Garber. Garber & Son, commercial well drillers, of Milwaukee, Wisconsin.

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Wire Rope
COMPANY
Manufacturers of Wire Rope, Wire Rope Assemblies, Slings
2939 Fourteenth Avenue, Kenosha, Wisconsin

112

Why you should put the highest-priced SUB in the hole

In submersibles Goulds quality doesn't cost much more . . . *and it pays off in the long run.* Here's how—

To work long and faithfully, a Sub must be designed right . . . must be built carefully of materials with the highest practical resistance to corrosion. Goulds UA Submersibles fit this description:

All bronze and stainless construction, water-lubricated motor. Entire pump can easily be disassembled in the field if necessary.

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2. You're putting in a pump that will be trouble-free and not eat up your profits in service calls.

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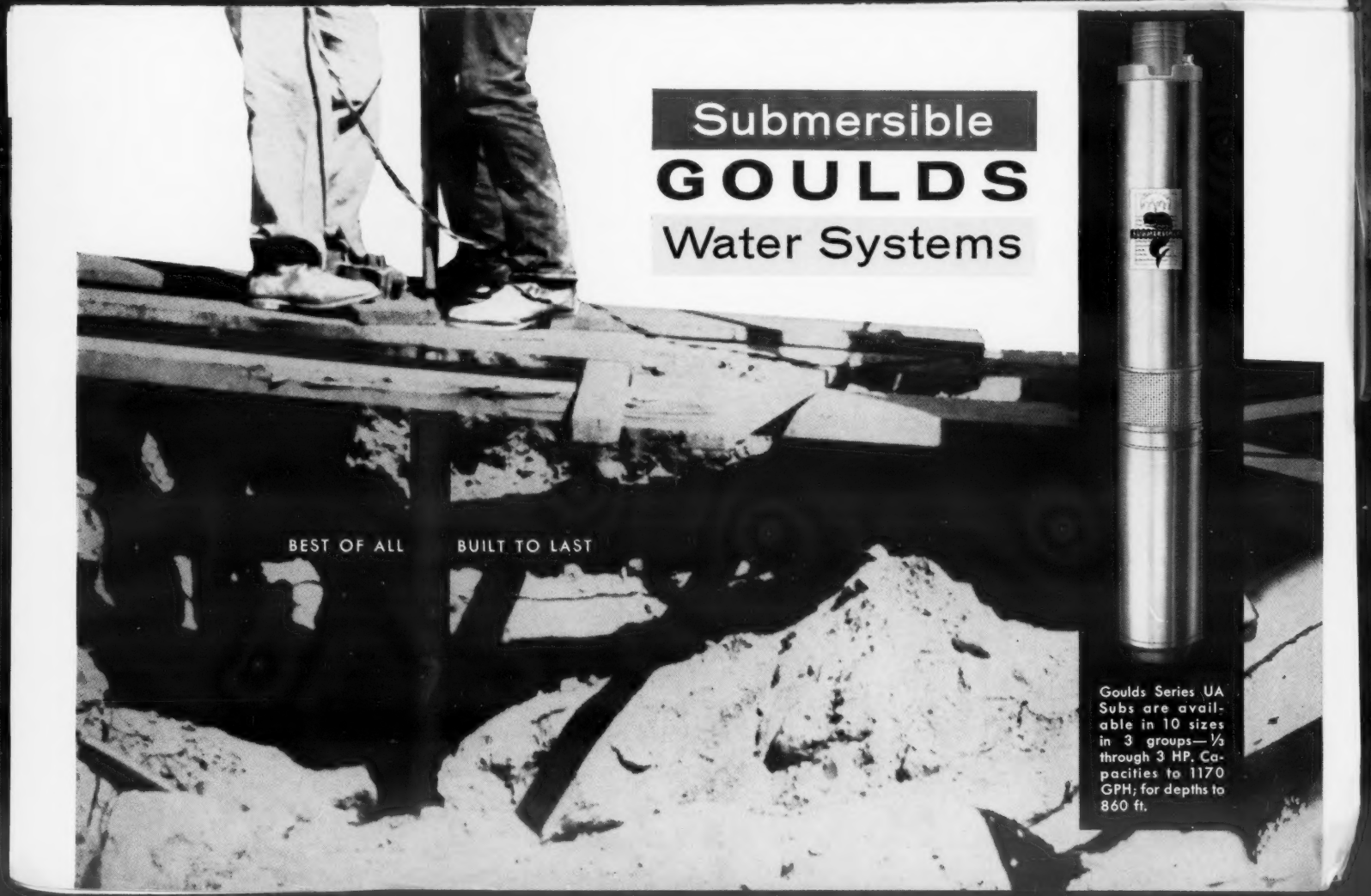
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GOULDS
Water Systems
BEST OF ALL
BUILT TO LAST
Goulds Series UA Subs are available in 10 sizes in 3 groups—½ through 3 HP. Capacities to 1170 GPH; for depths to 860 ft.

Orlando Converts Well Water Supply

Sydnor Well & Pump Co. uses three 36-Ls to drill 12 wells under a whopping $593,000 contract. The wells have average depth of 1,300 feet, will provide a total of 56 million gallons per day.

One of the wells being drilled for the new system nears completion below.

to Deep System

ORLANDO, Fla., a city with nearly 50 lakes, has converted its entire water supply system from lakes to deep wells. The date for the changeover was May 26 of this year.

This conversion is part of the Orlando Utilities Commission's $3,200,000 water works expansion program. The original plan included 10 deep wells, drilled to an average depth of 1,300 feet and cased to an average of 1,100 feet. These begin as 28-in. diameter wells, with reductions to 24, 20 and 16 inches.

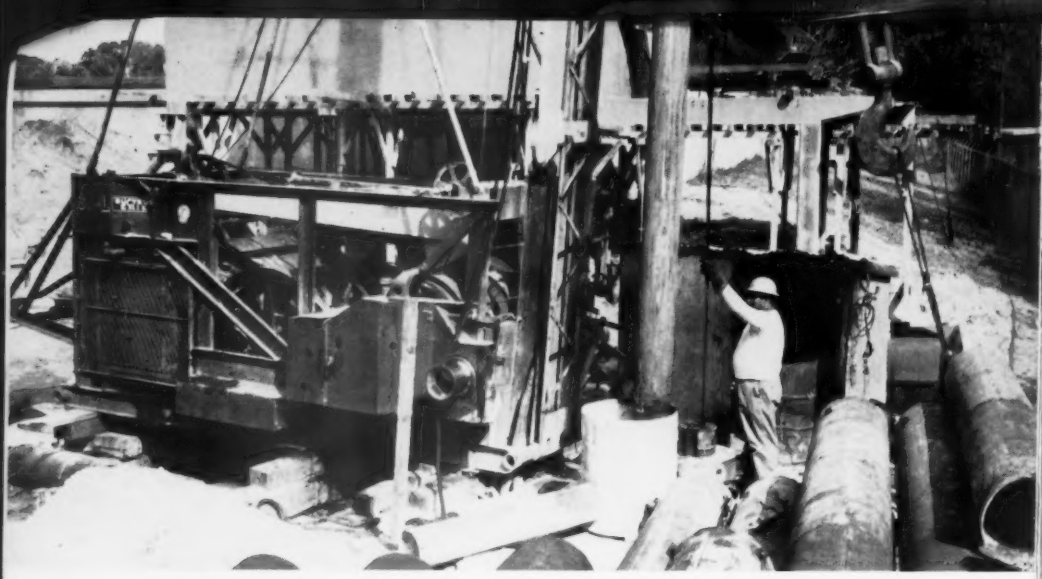
Two other wells, to supply a new industrial plant, were added to the schedule after the program began. Both have been completed—one, a 28-in. well, bottomed out at 409 feet; the other, a 12-in. well, bottomed at 380 feet.

Sydnor Pump and Well Co., Inc., Richmond (Va.) water supply contractor since 1889, is well along on its $593,000 contract to drill the 12 wells. Sydnor started the project in October, 1956.

"As far as we know, Sydnor's contract is the largest single well contract ever let in one lump," said Charles A. Black, vice president of Black & Associates, Inc., the Gainesville (Fla.) engineering firm retained by Orlando Utilities Commission to convert its water system.

Black calculates that the drilling cost will be absorbed in six years be-

Chatting in front of the pumping station for Well No. 5, are, from left: Charles Black, vice president of Black & Associates, Inc.; L. L. Garrett, manager of the Orlando Water Dept.; and Mel Trieste, resident engineer for Black & Associates.



Veteran driller Thomas Vires was down 1,128 feet on well No. 10 at the Kuhl Ave. water plant site. Caving formations were presenting a constant redrilling problem.

cause of a yearly saving of $100,000 in chemicals now required to treat the lake water. The system will not require purifying chemicals other than chlorine. Seated in dolomitic limestone of the Middle Eocene formation, Orlando's wells will provide water 15° cooler than that obtained from the lakes.

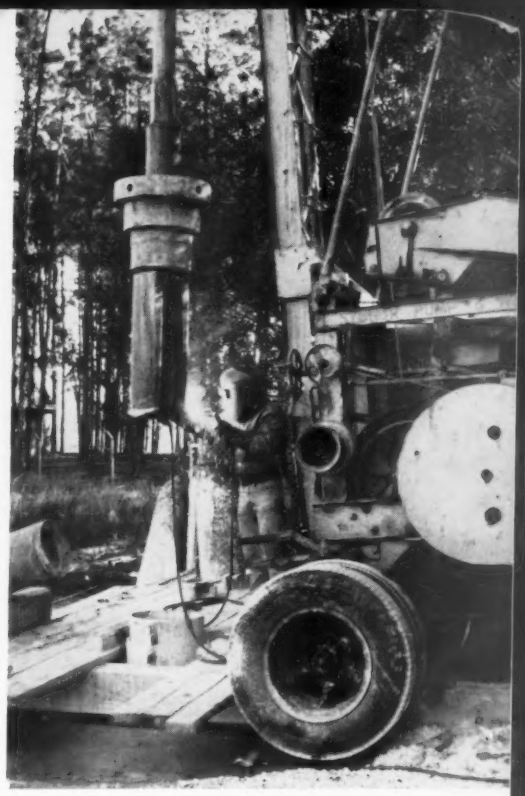
Fast-growing population made water works expansion necessary. Central Florida's largest city, located in the heart of the citrus district, now has an unofficial population exceeding 85,000. It has grown about 35,000 in the last decade.

Orlando for years obtained its water from lakes. As the city grew and industry arrived, deep wells were drilled to supplement the water system. Discharging directly into the lake, the deep wells maintained lake levels for the water system and power plants. The power plants use water for cooling.

Black & Associates suggested that converting the entire system to deep wells, deriving their supply from the Middle Eocene formation, would be cheaper than maintaining the lake supply. The reason: upper strata had become contaminated by drainage wells—citrus and sewage. In some cases, pockets of gas had formed.

"The presence of an aquaclud at approximately 1,000 feet below the surface separates water in the upper strata from Middle Eocene water,"

Here driller Vires displays a piece of limestone which he bailed from the hole.



A welder uses Stoody rod to hardsurface the bit swinging from this 24-L.

Black said. "After this formation is penetrated and the wells have been cased to the aquaclud, the water level will rise three feet in the wells.

"As far as we can figure from extensive study, the first municipal well drilled in the Middle Eocene in this territory was at Winter Park (Orlando's neighbor). After study and consultations with national and state geological surveys, we determined that the aquifer was adequate to supply Orlando's present and future needs.

"The water in Middle Eocene is purer than that found in the upper formation, where the limestone is mostly calcium carbonate. Dolomitic limestone of the Middle Eocene is less soluble."

The 12 wells will pump a total of 56 million gallons per day—5 million gallons each from 11 wells and one million gallons from the 12th. Orlando's average daily water requirement is 14 million gallons, with a peak of about 30 million gallons.

Rigid Specification List

Black & Associates prepared a list of rigid specifications for drilling contractors bidding on the original 10-well job. Among the specifications were:

1. Wells to finish not less than 20 inches in diameter, approximately 1,300 feet deep and cased to approximately 1,150 feet. Well casing shall be of new steel pipe, 3/8-in. and 5/16-in. wall, cemented in place.

2. Each well to be drilled "true, straight and vertical throughout" and within 1° of plumb.

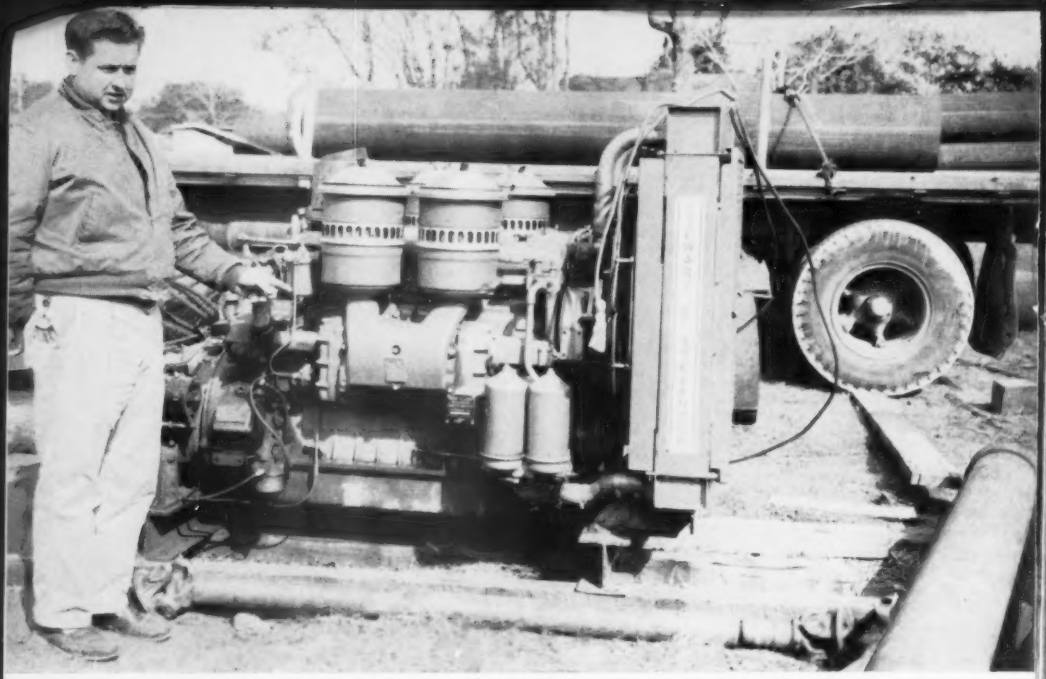
3. Contractor required to keep at least three drill rigs on the job and working at all times—"in good mechanical condition."

4. "The rig shall be capable of handling up to 7,000 pounds of tools and cable and shall be similar or equal to a Bucyrus-Erie 36-L."

5. Contractor required to take samples of material at every change of formation and intervals not exceeding five feet. Contractor also required to run two electric logs on each hole. Material samples and logs to be sent to Florida Geological Survey.

6. Contractor required to test each well with a deep well turbine pumping unit, complete with engine drive, with a pumping capacity of at least 4,000 gpm when operating at a total head of 90 feet for 48 consecutive hours.

7. Contractor required to build



C. C. Norris, Sydnor drilling superintendent, points to the engine which powers a Fairbanks-Morse 18-in. single-stage pump used for testing the completed wells.

concrete bases for above-ground pump installations.

Sydnor Pump and Well Co., Inc., won the contract and immediately purchased three 36-Ls for the project. A Bucyrus-Erie 24-L is kept available for pump installations, workover and miscellaneous jobs.

Orlando's Worst Winter

The Driller visited the Sydnor spread in mid-February on two days when the thermometer dipped into the lower 30s. Sydnor's drilling crews combatted the early-morning chill by wearing heavy jackets and lighting fires in trash barrels. The entire winter —one of the worst in Orlando's history—had been like this.

Sydnor's mid-February score was: six completed wells; three being drilled; and three to be drilled. Drilling time ranged from two and three months for the two shallow wells, which are located at Martin Station, to between four and six months for the deep wells.

Depths of the completed wells and drilling times are: No. 5, Pasadena, 1,415 feet, four months; No. 6, Lake Highland, 1,220 feet, eight months; No. 7, Montana Street, 1,349 feet, seven months; No. 8, Pine Hill Station, 1,414 feet, six months; No. 11, Martin Station, 409 feet, three months; and No. 12, Martin Station, 380 feet, two months. The No. 11 job was delayed a month when caving conditions at 375 feet complicated a fishing job.

The 36-L on well No. 3 at Virginia Drive was down 513 feet; the rig on No. 4 at Park Lake was at 1,162 feet; and the 36-L at No. 10 at Kuhl Avenue Reservoir was at 1,128 feet. Still to be drilled were wells Nos. 1 and 2, on Lake Ivanhoe, and No. 9, in the Primrose Section. (*At this writing, the Kuhl Ave. well has been com-*

pleted. It pumped 4,500 gpm with seven feet of drawdown in five hours.)

For drilling, the diesel-powered 36-Ls are removed from their tandem mountings and placed on 12 x 12 sills of 16-ft. long oak with 2 x 6 and 2 x 10 oak boards.

Drilling crews are supervised by young, wavy-haired C. C. Norris, Sydnor's assistant drilling superintendent. He reports to Guy E. Webb, operations manager of Sydnor's drilling division. Garland S. Sydnor, Sr., is president of Sydnor Pump & Well Co., Inc.; Garland S. Sydnor, Jr., is vice-president; and T. A. Sydnor is secretary.

Norris started the project by operating one 36-L and managing the other two. Soon, he dropped himself as an operator and made co-ordinating the work of all three rigs his full-time job. "By doing this, we figure we've cut off 40 to 50 days of drilling time on each well," Norris smiled.

A driller and helper man each rig. They work 65 hours a week, including five on Saturday.

Discover Cavernous Formations Early

Norris and his crews learned early that they would find a cavernous formation about 350 to 500 feet down in most of the wells. The caverns were as much as 16 feet deep, with a hard layer of rock above and below.

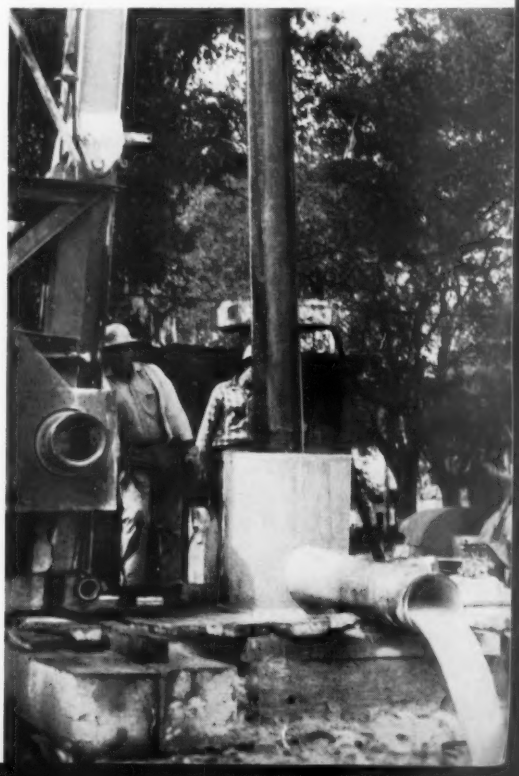
"It pays to go past the cavern," Norris said. "After that, it's all right. All the water we want is below 1,200 feet. We tested three wells above 1,200 feet. They produced a maximum of 1,000 gpm. The maximum on wells below that was 5,000 gpm—the capacity of our test pump—with an 11-ft. drawdown."

A cave on Well No. 6—one of the first wells to be drilled—presented the spread with its most perplexing problem. "We didn't have the casing down far enough," Norris explained. "The result was that we had to spend six weeks cementing off the cave. We made a bailer with a bottom trip to dump cement on the bottom of the cave. We finally sealed it off and completed the well at 1,220 feet."

No. 10 well, where driller Thomas Vires had the tools down to 1,128 feet, was the trouble spot in February. Porous caving formations had created a constant redrilling problem below 960 feet. "We're bailing out clear water," Vires said. "There aren't enough drillings in the hole to scour the blackness off the tools."

Geology of Sydnor's Orlando wells

(Continued on page 28)



Driller Roger Newton, 21, empties the bailer on this 36-L. The drill was down 1,162 feet on well No. 4 at Park Lake.

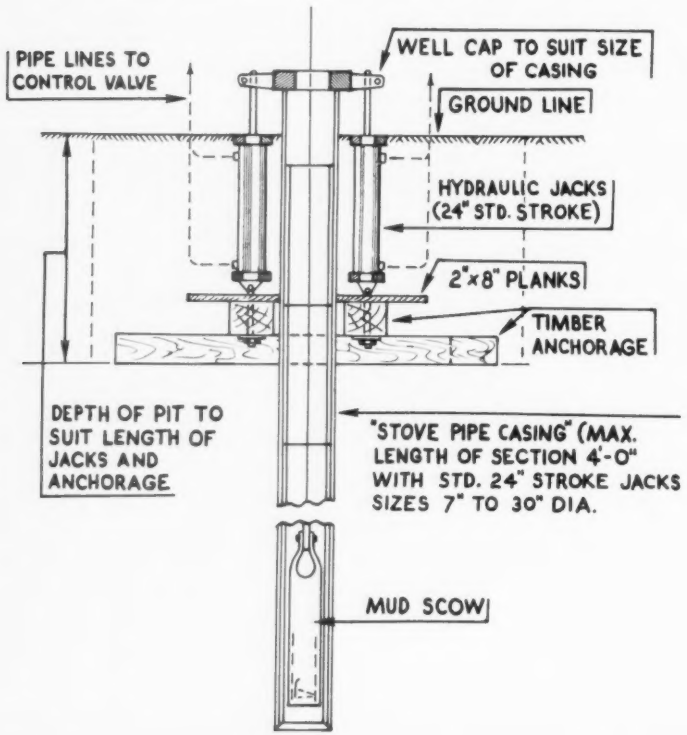
Mud Scow Drilling

By maintaining constant downward pressure on the pipe during drilling, while removing material adjacent to and below it, the pipe is forced into the excavated space. Here's how it's done.

BECAUSE of their own peculiar formation characteristics, many areas in the world are especially suited to mud scow drilling.

The prime formations requiring this type of drilling equipment are alluvial basins from which high-yielding wells of one large diameter installed top to bottom may be developed to depths beyond normal. It is not uncommon for such single large-diameter wells to range in depth from 1,000 to 1,800 feet. Under these conditions, side wall friction might prevent driving pipe

The illustration below shows a typical mud scow drilling installation.


PIPE LINES TO CONTROL VALVE
WELL CAP TO SUIT SIZE OF CASING
GROUND LINE
HYDRAULIC JACKS (24" STD. STROKE)
2"x8" PLANKS
TIMBER ANCHORAGE
DEPTH OF PIT TO SUIT LENGTH OF JACKS AND ANCHORAGE
"STOVE PIPE CASING" (MAX. LENGTH OF SECTION 4'-0" WITH STD. 24" STROKE JACKS SIZES 7" TO 30" DIA.
MUD SCOW

This article is based on material taken from "Water Well Drilling with Cable Tools" — by Raymond W. Gordon. Copies of the book are available at a cost of $2.50 from Bucyrus-Erie Co., Publicity Dept., So. Milwaukee, Wis.

the full distance unless hole size is reduced.

The principle of mud scow drilling is that constant downward pressure is maintained on the pipe while material adjacent to and below the pipe end is removed, thereby forcing the pipe into the excavated space. This is accomplished in the following way:

A cellar is first dug to accommodate anchors, braces, hydraulic jacks, and starting pipe. This cellar is usually 10 feet deep, 6 feet wide, and 14 feet long, the length of the cellar running parallel to the rear axle of the drill. In the center of this pit, the 10-ft. length of starting pipe is located. On each side of the pipe a 12-in. x 12-in. x 14-in. timber or steel H-beam is placed to provide anchorage for the two down-pulling hydraulic jacks. Heavy planking, held in place by four diagonal braces leading to the center of the anchor timbers, supports the side ends of the cellar. All upthrust forces produced by the jacks as they pull down the pipes are therefore dissipated against the end walls. To maintain jack and anchor positions throughout the work of well installation after connecting pipes have been installed from the jacks to the pump, the whole pit is refilled with previously excavated material or with gravel.

A horizontal reciprocating double cylinder pump, chain-driven from the drill rig jackshaft, and capable of some 3,000 pounds psi working pressure, forces fluid into the jacks, while a

(Continued on page 30)

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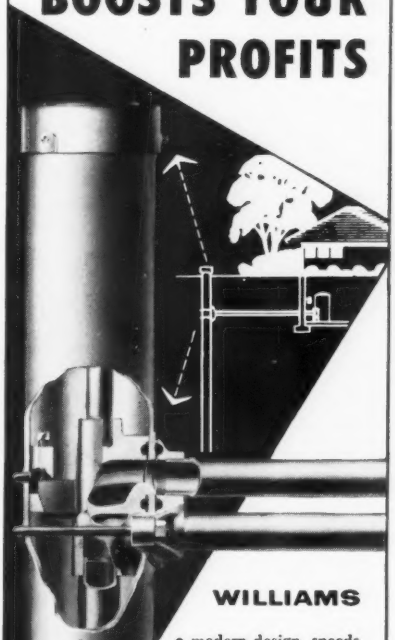
BOOSTS YOUR PROFITS



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News of the month

Chandler-Boyd Named Bucyrus-Erie Drill Distributor

Chandler-Boyd Co., Leetsdale, Pa., has been appointed a distributor for the complete line of water well and oil well drills manufactured by Bucyrus-Erie Co., Richmond, Ind.

Chandler-Boyd, a subsidiary of McJunkin Corp., Charleston, W. Va., has been assigned the part of McJunkin's territory in Pennsylvania south of and including the counties of:

Erie, Crawford, Venango, Clarion, Jefferson, Clearfield, Centre, Blair and Bedford.

Chandler-Boyd will handle the following drill models: 1-W, 20-W, 22-W, 60-L, 28-L, 36-L and 48-L. Adequate stocks of Bucyrus-Erie drilling tools and machine parts will be carried at Leetsdale. Service facilities also will be maintained.

New Control Valve Standard Equipment on Dorward Pumps

A new adaptation of a control valve for a deep well jet pump has been worked out by Dorward Pump Div. of Besler Corp. Built into the control valve plug is a venturi tube which acts as an air charger. This device throws a gulp of air into the pressure tank at each starting of the pump. According to the company, users report that this air volume control device helps to maintain a tank air cushion for months and years at a time.

For complete information on the control valve, which is a standard part on every Dorward deep well jet pump, write the company at: Department TD, 4053 Harlan St., Emeryville, Calif.

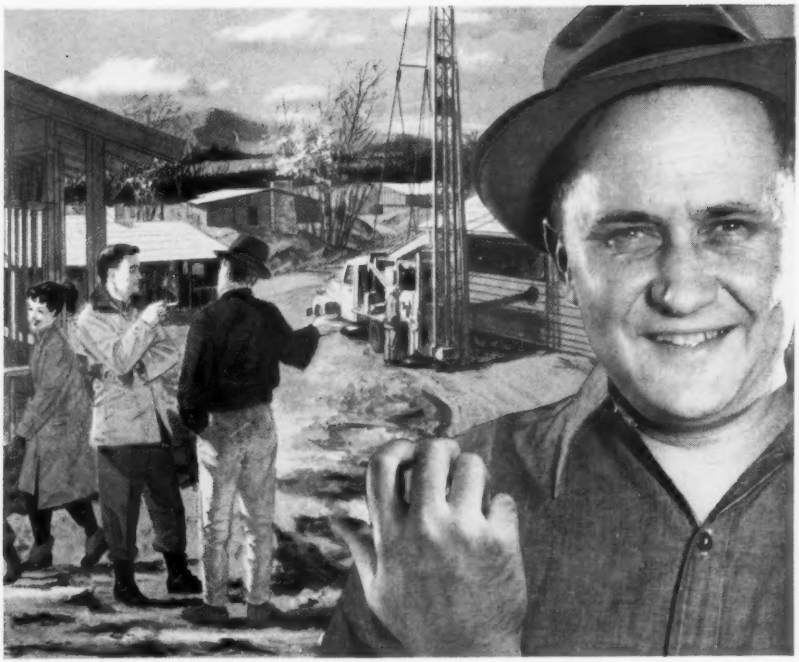
Water Well Drillers Lay Plans for Broad Public Education Program

Plans for a concerted five-year publicity effort to make the public better aware of what a qualified well-drilling contractor has to offer have been set into motion. The industry leaders who will undertake this campaign are members of the Public Education Committee of the Manufacturers and Suppliers' Div. of the NWWA. They met in Chicago, May 2, to finalize an approach to their long-range plans.

"We must inform the homeowner located beyond city water mains how to buy a well, what to expect from a qualified well-drilling contractor and how to select that contractor," David A. Williams, chairman of the committee said. Williams is sales manager for the well department of the R. R. Howell Co., Minneapolis, Minn.

Buying a well is usually a once-in-a-lifetime venture for a homeowner, it was pointed out. "Too often the purchaser of a well doesn't know what his needs really are or how he should go about establishing proper estimates of those needs," Williams suggested. "Our job is to make it easy

(Continued on page 26)



"I have more time to sell new prospects because . . . I install DEPENDABLE

DEMING PUMPS and WATER SYSTEMS

When I install dependable Deming Pumps and Water Systems I assure myself permanent profit in addition to other important advantages. The rugged construction and precise engineering of Deming Pumps mean that my profits won't be eaten away by costly service 'call-backs'. I can spend more time drilling wells and selling pumps. My customers benefit by longer, better pump performance at proven lower yearly cost of operation and up-keep."

Be Sure . . . for your next installation to specify

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Get all the facts on the big Deming line . . . it means bigger profits for you . . . and complete satisfaction for your customers.

Deming's complete line includes Submersible Pumps, Convertible Jet Water Systems for shallow and deep wells, Shallow Well Reciprocating, Deep Well Rod, Multi-Stage Centrifugals, and Turbine Pumps in a wide range of sizes and capacities.

THE DEMING COMPANY 512 BROADWAY, SALEM, OHIO

Please send me complete information on Deming Pumps and Water Systems.

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ADDRESS_____

CITY_____ ZONE_____ STATE_____

The Pump of the Future...**TODAY**

Rapidayton

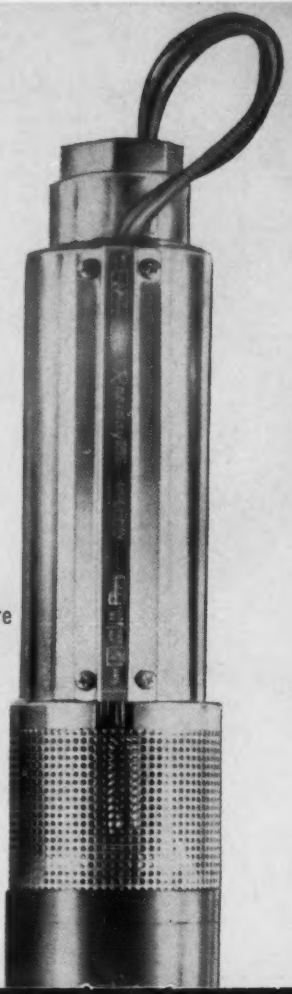
TWO WIRE **SUBMERSIBLE**

New ADVANCED SIMPLIFIED Design Eliminates Installation and Service Problems

Now, for the first time, there's a submersible pump for the BIG VOLUME market—a submersible that can meet the needs of all the domestic installations in your area—both shallow and deep wells, 4" or larger, 0 to 360 feet. It's the new Rapidayton 2-wire Dolphin* submersible with **advanced simplified** design which eliminates installation and service problems. Gone are water-tight splicing problems, since cable (60, 80, or 100 ft. long, depending on horsepower) is attached to pump at factory. Gone is the control box; you merely connect cable to simple overload protection box (furnished) at top of the well. For big volume, high profit, and easy installation, sell the new Rapidayton 2-wire Dolphin submersible.

YOU HAVE YOUR CHOICE!

3-wire Dolphin submersible models are also available from Rapidayton in three 4" series up to 3 h.p. for wells 0 to 500 ft.



DOUBLE LIFE STAGE DESIGN

The Rapidayton 2-wire Dolphin submersibles have the same exclusive

"Double Life" stage design as the 3-wire models now in dependable service from coast to coast. The "Double Life" design makes use of tough nylon for impellers. This construction, providing "loose" tolerances over first 20 days during which nylon is expanding to a predetermined limit, insures maximum protection against sand, higher efficiency, and longer life.

"PLUS POWER" MOTORS

The Tait-designed and made motor used in the 2-wire Dolphin submersibles is built for extremely high efficiency and "plus power." It operates just like a conventional capacitor-type jet motor. The hydraulic starting switch (with special mercury cut-out) permits use of super size capacitor, assuring high-torque starts. Dielectric fluid-filled. Electronically tested. Motor parts vacuum impregnated with resin.

FOR WELLS 0 TO 360 FT.

The complete 2-wire line of Rapidayton submersibles includes 11 models, each available as pump only models or as complete systems with 42-gallon tanks which meet FHA requirements. They are: Deep-Setting models in ¼, ⅓, ½, ¾, 1 h.p.; Mid-Range in ⅓, ½, ¾, 1 h.p.; High Capacity in ¾, 1 h.p.

¼ h.p. pump, including attached cable and overload protection box, retails for $169.50

Rapidayton division

The Tait Manufacturing Company, Dayton 1, Ohio

Established 1908 as The Dayton Pump and Manufacturing Co.

News . . .

(Continued from page 22)

for a homeowner to buy his well and the other necessary equipment that will result in his having service comparable to what he would expect in a city."

The committee has suggested a statement of ethical practices that many qualified well drilling contractors are already using in the operation of their businesses. These suggestions might be printed on each contract given to persons having a well drilled in order that they might know what to expect from the drilling contractor in performance and service. Williams stressed that the proposed statement is offered as a suggestion of the committee and as a guide for each driller and homeowner. Often these points aren't presented in such a way that the customer is made aware of the skill and wide experience the well-driller must have to do his job successfully. Through use of this proposed code of ethics, the committee agreed, a contractor can set his customer's mind at ease. Listing his services will also help the individual drilling contractor show his prospect how important it is that a really qualified contractor be chosen.

Ellis Named Southern Pipe Sales Manager

John A. Ellis has been appointed sales manager of Southern Pipe & Casing Co., Azusa, Calif., a division of U. S. Industries, Inc.

Ellis, who has been with Southern Pipe since 1947, was moved up from assistant sales manager to fill the post vacated by D. N. Chamberlain, who was named executive vice-president.

VALLEY STEEL PRODUCTS COMPANY

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ALL WTS.

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GALVANIZED
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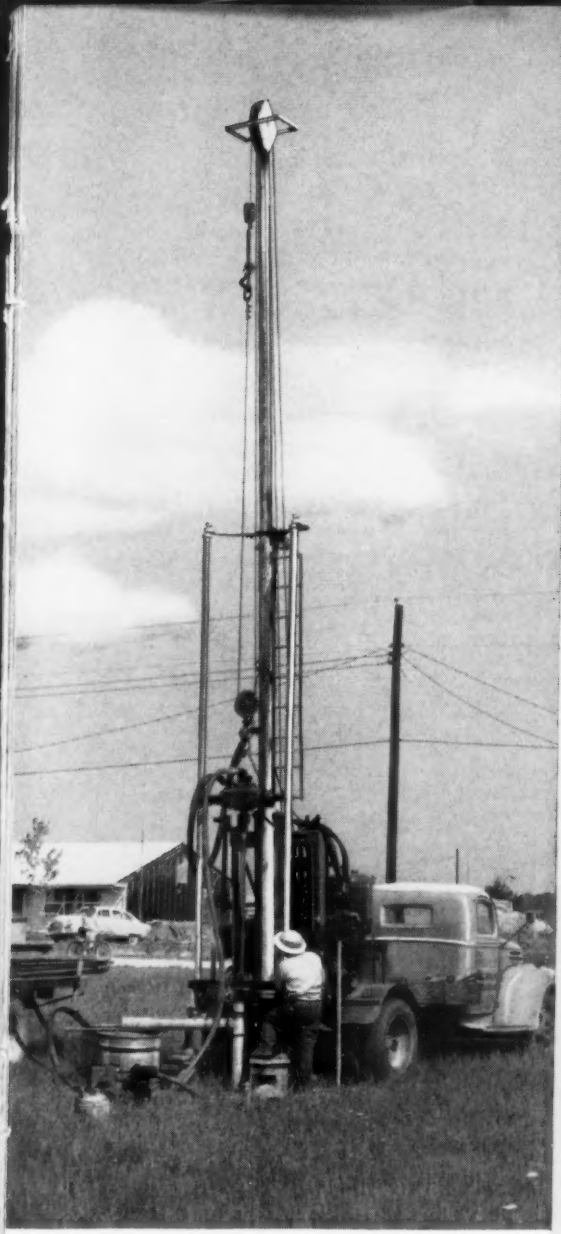

"Twice as much hole with 1-W rotary"

. . . agree Tom Helvie & Sons Marion, Indiana

Demonstrated! "After seeing the rotary attachment in operation, the boys and I were so enthused we placed our order for one that same day. Later, I thought more about it and felt maybe I'd jumped the gun, so I cancelled the order. But we reconsidered, and, believe me, we aren't sorry." — Tom Helvie, Sr.

Purchased! "When we first bought the new Bucyrus-Erie rotary attachment for our 1-W, we tried it out in the yard, drilling a 60-ft. practice hole. It worked beautifully, even though we were inexperienced in using rotary." — Tom Helvie, Sr.

Proved! "It's easy and fast to operate. It actually takes two men to operate this 1-W with the rotary attachment: you put down hole so fast that you're continually adding drill stem to keep up with your progress." — Jim Helvie.

"This rotary is really *the* thing. We drill twice as much hole with it as we did before with two rigs." — Tom Helvie, Jr.

Satisfied! "We're sure completely sold on the rotary attachment." — Tom, Sr.

112W58C

Investigate TODAY! You, too, can enjoy faster drilling, bigger profits with the Bucyrus-Erie 1-W rotary. Both the rotary head and breakout table are designed for quick removal to run or pull pipe or to change to cable tool, jetting or hollow rod drilling. Write today for the complete story.

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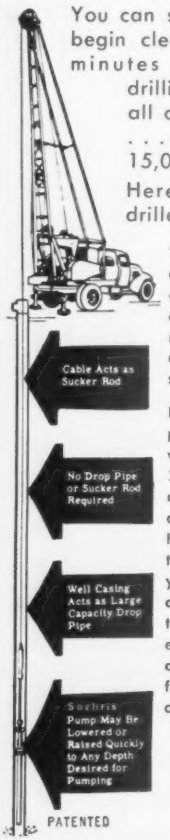
SOCHRIS "WELL DRILLER'S PUMP"

No drop pipe . . . No sucker rod needed . . . pump operates by cable from rig . . . automatically seals off casing . . . gives a real clean-out . . . and accurate capacity test too . . . eliminates bailing.


Cable Acts as Sucker Rod
No Drop Pipe or Sucker Rod Required
Well Casing Acts as Large Capacity Drop Pipe
Sochris Pump May Be Lowered or Raised Quickly to Any Depth Desired for Pumping
PATENTED

You can set this pump and begin clean-out within ten minutes after you finish drilling. Available for all casings 3" and up . . . capacities up to 15,000 GPH.

Here's what another driller reports:

"We have been using one of your well driller's test pumps for about three months now and find it to be a great labor and time saver.

Before using your pump we would carry with us five lengths of 2" pipe, pump jack, and motor for testing our wells. But now we have eliminated all this, and carry only your test pump which does the job in far less time, as the pump is easy to install and does a better and faster job of testing our wells."

Write for bulletin advising inside diameter of wells

SOCHRIS DEVELOPMENT CO.
WILMETTE BOX 82 ILLINOIS

Orlando . . .

(Continued from page 19)

shows a 30-ft. top layer of sand, followed by from 30 to 150 feet of blue-gray clay, with rock intrusions. It's limestone the rest of the way, with proper respect due the caverns at 350 to 500 feet.

Well Construction Described

The wells are constructed like this: 34-in. casing is set through the surface sand, then 28-in. casing is driven to cap rock, followed by 27-in. drilling past the first cavernous formation. Then, 24-in. casing is driven past the first cavernous formation, and 23-in. drilling carried to about 25 to 20 feet below the 24-in. casing.

Inside cutters are used to cut out the 24-in. casing, leaving a 20-ft. lap inside the 28-in. casing. A rubber seal which swells to 28 inches is used on the 24-in. casing. Then, 20-in. casing is run in with a combination cement and float shoe. A 3-in. pipe carries a 13-lb. cement slurry into the hole at a maximum 300-lbs. pressure until a return registers outside the 20-in. casing on top of the ground. Sydnor's custom-built 8 x 25-ft. grouting rig is semi-trailer mounted. The cement pump is powered by a 6-cylinder Chevrolet gasoline engine; a 4-cylinder Hercules engine powers the water pump. Water from a 4 x 6-ft. water tank is discharged at 90 to 100 pounds pressure to a jet hopper, where cement is added. The grout is delivered into a ½-cubic yard tub, from which it is pumped into the hole at a rate of approximately four bags every minute.

After a 72-hour wait, 19-in. drilling is carried to approximately 1,150

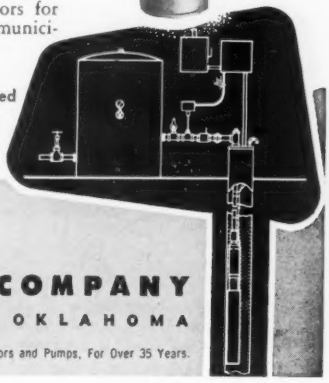
(Continued on page 40)

choose sales leading REDA Submergible Pumps to lift your profits!*

**Ask us to prove it! Over 100,000 REDA Pumps are now in use.*

As a dealer for REDA you are assured of a *complete line* of submergible pumps from ⅓ to 300 horsepower, for any depth, capacity or pressure your customers may require!

Your sales are backed by REDA's 35 years of manufacturing the highest quality, competitively priced submergible pumps and motors for homes, farms, ranches, industries and municipalities.



Simple, one-pipe installation, sealed lubrication, liberal warranty!

Get the FACTS. Write for complete information TODAY:

SIGN OF QUALITY SUBMERGIBLE REDA PUMPS

REDA PUMP COMPANY

BARTLESVILLE, OKLAHOMA

Worlds Largest Manufacturer of Submergible Electric Motors and Pumps, For Over 35 Years.

Mud Scow Drilling . . .

(Continued from page 21)

simple system of shut-off valves directs the flow of fluid either to lift the cylinders and plungers of the jacks or to pull them down.

The jacks are usually 8 x 60 inches, but vary with individual taste. At 2,000 pounds pump pressure, each jack will exert a force against the pipe of 100 tons. Though some operators use alcohol or water, one of the better fluids for jack operation is an inexpensive special vegetable oil which prevents rust, serves as a lubricant, flows easily, is not so difficult to control as alcohol or lighter fluids, and is not as expensive as special hydraulic oils.

At the upper end of each jack plunger is a loop which may be engaged or disengaged from the ears of the pipe driving cap, an outside drop type which allows for the entrance of the scow into the hole.

The mud scow itself is composed of a heavy, double-strength pipe fitted on the bottom with a heavy flat valve and on the top with two extending reins. These reins are usually made from 2 x 5-in. stock welded to the top of the scow and brought together to admit a 2½ x 5-in. sub-blade through which a 2½-in. hole provides access for the connecting pin. For 24-in. hole work, a 16-in. diameter scow, 15 feet long, is frequently used with a machine whose capacity is equivalent to that of the Bucyrus-Erie 60-L. Depending upon the length and diameter, scows may weigh as much as 2,000 pounds. At a point approximately one-third up from the bottom of the scow, a 3 x 8-in. hole is cut to discharge excess water which may be held in the scow as it is brought to the surface. The bottom of the scow is usually hardsurfaced.

" . . . but halfway down, the drill bit hit a rock ledge, the pin snapped off the bit, the stem passed the bit and . . . "

A sub-blade is provided with a pin joint to connect to the balance of the cable tools used in the process. Generally, 2¾" x 3¾"—7 API or 3¼" x 4¼"—7 API joints are selected. Jars with 18 or 24-in. stroke connect the sub with the rope socket to complete the tool string.

Usually a hole is started with a conventional string of cable tools, but some operators start right off with the scow when water is available for hole operations. It is easier to start a straight hole with cable tools, however, because in most formations they produce a hole which the tools will follow when driven. But if the pressure applied by each jack is not exactly equalized at the start, a straight hole may be difficult to obtain. When cable tools are used on machines with about the same capacity as the Bucyrus-Erie 60-L, the bit used is often a spudding bit of suitable diameter on which "wings" or bars of steel have

Faster, easier installation!

USS National Double-Duct Polyethylene Pipe

(NSF Grade)

USS NATIONAL Double-Duct Polyethylene Pipe (NSF Grade) consists of two separately extruded, joined pipes. Expressly designed for jet well installations, it facilitates attachment of the pipe to the venturi and makes it easy to feed the drop pipes into the casing. Made of 100% virgin on-grade polyethylene resin, NATIONAL Double-Duct Polyethylene Pipe is light in weight, corrosion-proof and durable. Available in four different sizes—standard and 75# pressure-rated.

For complete details, write to National Tube Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania. Ask for Bulletin 29.

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GMC 6x6 NAMED ARMY'S BEST ALL-AROUND TRUCK!

UNUSED!
GUARANTEED! NEW-TRUCK PERFORMANCE!

- **Extra Pull Power!**
- **Double Traction for Mud!**
- **Special "Off Road" Design!**

From Government Storage—these all-wheel-drive GMC 2½ ton 6x6's were specially designed by the U. S. Army to take the roughest terrain in all kinds of weather. These unused 6x6's can do the same for you in all your truck jobs; whether in a muddy field or along a super highway.

Processed — by Memphis Equipment Company — down to the last bolt to assure you of receiving the finest unused GMC 2½ ton 6x6 trucks available today. Parts available anywhere in the nation.

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Please rush me complete details on your bargain-buy GMC 6 x 6 army truck!

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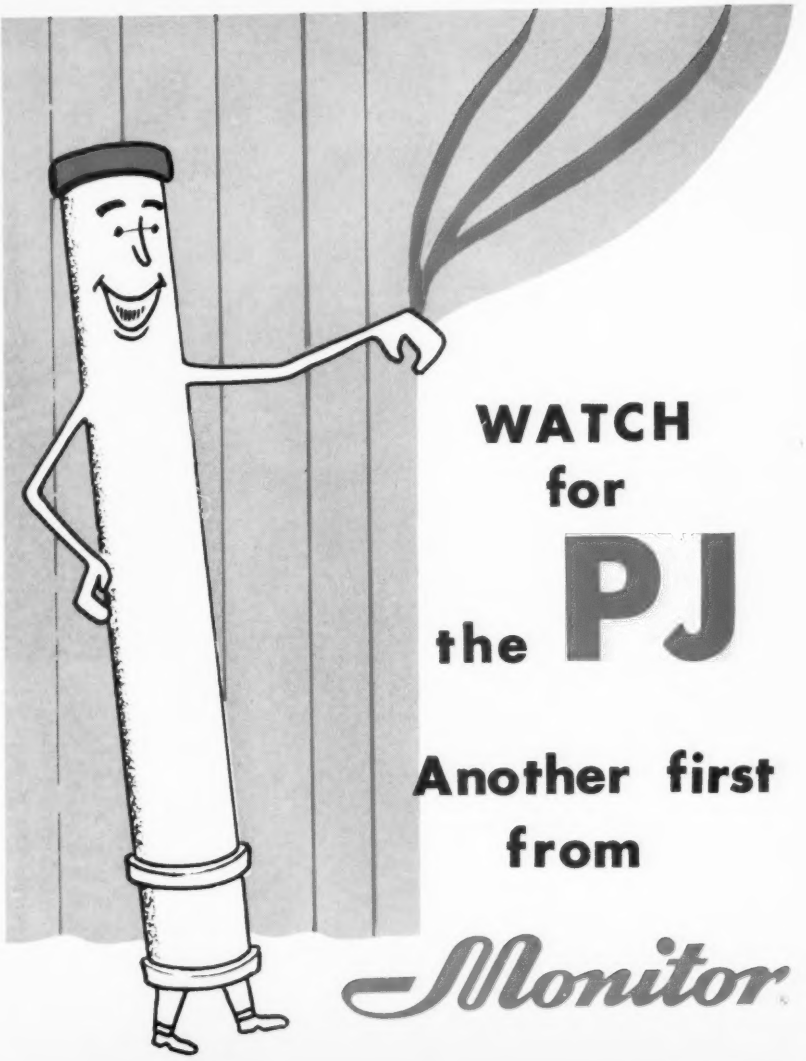
been welded in the water channels to form a four-wing or star pattern. Gauge is maintained by applying electric welding rod with cutting edges hardsurfaced.

When the hole has reached the point where water is first obtained, or when 100 to 200 feet of pipe have been installed and water made available for hole use, cable tools may be exchanged for scow equipment. In this change-over, tools are usually disconnected at the rope socket joint and secured to the derrick, for later they may be required to crush large stones or boulders encountered during the process. All during drilling, down pressure is maintained by the jacks to force pipe into the space excavated by the scow. The drilling motion employed with scow equipment differs from that used with conventional cable tools in that the scow is operated with a comparatively slow up-and-down movement (about 20 to 25 strokes per minute) and uses a relatively loose line, which produces sloppy drilling action. Constant down pressure is maintained on the pipe during this procedure by the jacks to force it into the space excavated by the mud scow.

When the scow is about one-third full of material, it is hoisted to the surface to be dumped. As the reins of the scow appear at the mouth of the well, a hook attached to a length of rope is slipped around one rein, and the scow is lifted out of the hole and brought to stand upright on the platform. Drill cable is then payed out to permit the top of the scow to be pulled over by the rope and hook to rest horizontally on the ground.

If sufficient manpower is not available to tip the scow over in the desired direction, the catheads will solve

(Continued on page 38)



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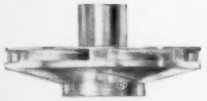
BAKER MANUFACTURING COMPANY
EVANSVILLE, WISCONSIN

now...
a new, improved
SUBMERSIBLE PUMP
from STA-RITE
You're looking at tomorrow's pump... *today*. Made possible by a completely new concept in Submersible pump engineering... Sta-Rite *polystyrene plastic impellers*. The simple fact is—after 3 years of testing—Sta-Rite polystyrene impellers now make better, more efficient pumps. Plastic—durable enough for boat hulls; sanitary enough for drinking glasses.

Plastic impellers—smoother water passages; much higher performance per stage; proved better in thousands of Sta-Rite jet pumps! And the complete new Sta-Rite submersibles pump to 875 ft., deliver up to 6000 GPH.

THIS IS SUBMERSABILITY

"Sealed-Power" polystyrene impellers . . . resist corrosion, resist abrasives, won't absorb water, won't swell.



Ordinary tools are all you need to service this pump at the well. What's more, liberal, new Exchange Plan lets you pull a pump when needed, exchange immediately for factory repair. Be sure to get the details.

STA-RITE

For full information about new Model PP Submersible Pumps, plus the complete new line of special submersibles, write, wire or call Sta-Rite Products, Inc., Delavan, Wisconsin

Warehouse and factories in these cities: Chamblee, Ga. • Los Angeles, Calif. • Dayton, Ohio • Miami, Fla. Sherman, Texas • Denver, Colo. • In Canada: Sta-Rite Pumps (Canada) Ltd., Ajax, Ontario

BITS *from the wit sharpener*

The young man's parents objected to their son's choice of a girl friend. "But gee, Dad," said the boy, "she's the best I can get with the car we've got."

A Scotch Terrier took his wife and little puppy son to a dog show and, much to his surprise, walked off with the ribbon denoting him as the best dog in the show. He naturally was quite proud of himself so on the way home he wanted to stop in at his favorite tavern to give the good news to his cronies. So he sent his wife and puppy on home and stopped for a few short ones, bragged a while, and finally went home himself.

But when he arrived at his home, he realized he had left his first place prize at the tavern. So he sent his little puppy son to the tavern to pick it up.

The little one sauntered cockily into the bar and looked around. The bartender pointed a finger at him and demanded, "What'll you have?"

"Pop's Blue Ribbon!" was the pup's quick reply.

A thin, worn out woman brought her husband to court. "Judge," she said, "He's so terrible cruel. He's a hypnotist and just before meal time he always hypnotizes me into thinking I'm a canary and gives me nothing but bird seed to eat."

"Is that true?" the judge asked.

"Your honor," said the husband, "she's a lucky woman. I could just as easily have turned her into a sparrow, and then she'd have to go out and hunt her own food."

The county agricultural agent sat in his office and, when the phone rang, he picked it up with a cheery, "Hello."

A woman's voice answered: "Say, I have a flock of chickens, and I want to know if I put a rooster in with my hens how long will it be before I can expect fertile eggs."

"Just a minute," said the courteous farm advisor, as he reached across the desk to get the pamphlet which might have the information.

"Thank you," replied the lady, as she hung up.

"Thought you were going to visit that blonde in her apartment tonight."

"I did."

"How come then you're home so early?"

"Well we sat awhile and chatted. Then suddenly she turned out the lights. I can take a hint."

The teacher had asked her pupils who the nine greatest Americans were. All the students had turned in their papers except Johnny.

"Can't you finish your list, Johnny?"

"I'm still undecided," replied Johnny, "about the first baseman."

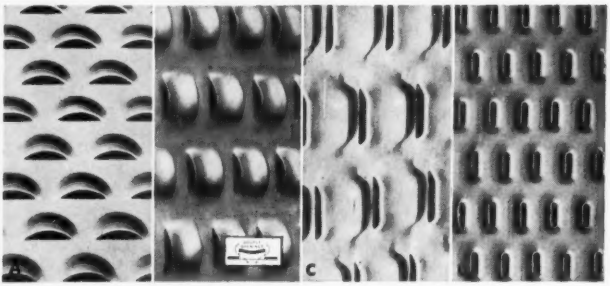
One nice thing about sport cars: If you flood the carburetor, you can just put the car over your shoulder and burp it.

A newlywed filling out his income tax return listed a deduction for his wife. In the section marked "Exemption claimed for children" he penciled the notation, "Watch this space."

STAINLESS STEEL

WELL CASING

Corrosion is stopped by welded stainless steel casing. If acid or alkaline soil conditions present a problem... then stainless steel well casing is your permanent solution.



4 Perforation Styles

A. LOUVRE. Louvre down keeps fine sand out. Very popular for gravel packed rotary drilled wells.

B. DOUBLE LOUVRE. Up to 50% more perforated area. Up to 8 ga. thickness, min. diam., 10". Very strong.

C. TWIN FLOW. Water enters from opposite sides of perforations 1/2" to 1" long, 1/16" to 1/4" deep.

D. STANDARD. Popular for fine sand at moderate depth. 3' to 21' lengths, as desired.

4 Field Joints

PLAIN END
For welding... popular for modern, quick assembly of black welded casing.

PLAIN END
With butt strap for fast field welding. Line-up holes insure true joining.

LAPPED JOINT
For riveting . . . popular for galvanized, riveted casing. Tapered ends, gang punched.

LAPPED JOINT
For bolting . . . 5/16" T-head bolts can be installed from outside.

Write for **FREE** well casing catalog.

THOMPSON PIPE & STEEL COMPANY

3007 Larimer Street • Denver 1, Colorado • TAbor 5-1241

Name..... Address.....

City..... State.....

Mud Scow Drilling . . .

(Continued from page 32)

this problem easily. A deadman or stake driven into the ground some 30 feet from the machine anchors a pulley which carries a length of 1-in. rope leading from the hook to the cathead. Two or three loops of rope tightened around the cathead will lead the bailer mouth in the desired direction if the bull reel brake is released at the same time.

When a suitable hook has been attached to the casing line and inserted in a hole drilled in the lip of the scow bottom, the casing tackle hoisting machinery will lift the base end of the scow to discharge its contents. The scow may be raised back to vertical position by main hoist operation and drag control of the rope hooked into the rein of the barrel. With a little experience an operator can perform these operations rapidly and efficiently.

This pipe used in mud scow drilling may be described as the telescoping variety, also known as stovepipe casing. Each length consists of the selected thickness of plate, usually 3/16-in. diameter, rolled to form a piece four feet long. Alternate 4-ft. pieces are rolled to slide over the first and, when installed, the joints are staggered every two feet. The final thickness is therefore twice the original gauge. Seams are electrically welded, and joints are secured after jack-pressing into place by crimping with a hammer and chisel or by spot welding. Because the pipe cannot be pulled, the common practice is to perforate its walls opposite water-bearing areas.

It is interesting to observe the action of some of these wells both during

Pump Handle Pete Says: "One thing about the good old days—if you bought a horse, you could be pretty sure the model wouldn't change next month."

There's a lot of truth to that statement, Pete. 'Cause when you put much money into anything, you want it to stay around for a while.

One thing for sure—your customers won't have to worry about next year's model when they install JENSEN AUTOMATIC WATER SYSTEMS. They're years ahead in engineering . . . and guaranteed to lift more water for less money—year after year after year.

There's a Jensen to fit every water well need—from the cost-saving, knee-high Jensen 13-W to the big 650-DC, which will lift over 8,500 gallons of water per hour.

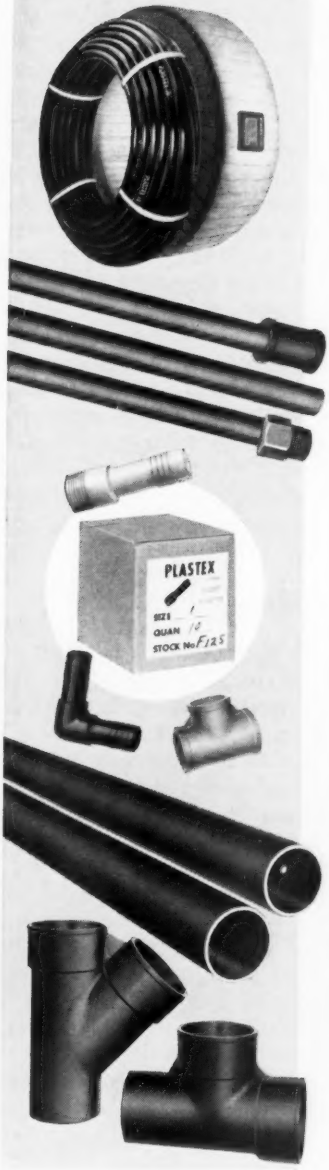
Next time they talk water problems—no matter how complex—suggest Jensen.

MODEL 50-DC
1 of 14 Sizes

JENSEN WATER SYSTEMS
Made by JENSEN BROS. MFG. CO., INC., Coffeyville, Kansas

You'll Sell More Plastex

because Plastex gives you more to sell!



FLEXIBLE PIPE

Plastex Polyethylene . . . in sizes from ½″ thru 6″ — 75 and 100 psi pressure rated — single and twin-tube types — lengths to 600′ — NSF approved.

SEMI-RIGID PIPE

Plastex Kralastic . . . in sizes from ½″ thru 6″ — for pressures to 150 psi and even greater chemical and heat resistance—10′ and 20′ lengths with plain ends, or sleeve-type coupling one end — NSF approved.

A COMPLETE LINE OF FITTINGS FOR BOTH

Packaged *Nylon* and *Styrene* insert-type, for mechanical coupling to flexible Plastex Pipe — *Kralastic* for solvent-weld coupling to semi-rigid Plastex Pipe — in every wanted style, ultra precision made, NSF approved.

AND NOW, DRAIN PIPE AND FITTINGS, TOO!

Plastex OX . . . high strength, high impact drain and sewer pipe — in 2″, 3″ and 4″ sizes — plain and perforated — with sleeve-type fittings for root-proof solvent-weld joints, or dry joints—10′ and 20′ lengths.

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THE PLASTEX CO.
SINCE 1939

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COLUMBUS 24, OHIO

JOIN THE
"can't lose"
Flexible Plastic
Pipe Contest

you're sure to win
customer satisfaction with
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FLEXIBLE PLASTIC PIPE

. . . you may also win one of 4 trucks . . . in addition to one of 100 other prizes in the DU PONT PLASTIC PIPE CONTEST!

Cresline is the *proved right* flexible plastic pipe. Proved right by grueling accelerated use tests. Checked for quality through every stage of production. Approved for drinking water use by the National Sanitation Foundation. Guaranteed *right in writing!* Because Cresline is made of Du Pont Alathon 25, the finest quality virgin polyethylene, those who handle Cresline are eligible to enter Du Pont's easy contest. Entry cards are attached to each coil of Cresline Flexible Plastic Pipe. Write today for literature and the name of your Cresline representative.

Investigate Cresline KL (Kralastic) . . .
the Superior Plastic Pipe for Extra-Rugged Use

Cresline KL pipe is made from 100% virgin Kralastic resin. The lightest of all semi-rigid or rigid plastic pipes, it is excellent for many home and industrial uses including drinking water service lines where working pressures permit. Because of its extra strength, it can be used in many applications instead of metal pipe at a savings of 50% to 75% on installation costs. Write for details.

Write for free authoritative booklet —
"How to Choose and Use Flexible Plastic Pipe"
All Plastic Pipe Is Round, Black and Has a Hole in It . . . But There Is a Difference!

CRESCENT PLASTICS, Inc.
Dept. D-8, 955 Diamond Ave., Evansville 7, Ind.

their installation and during subsequent pumping. Rather curious consequences have resulted when successive layers were developed between impervious layers in these deep holes. In one 1,200-ft., 20-in. well fitted with 10-gauge pipe, water-bearing gravels were encountered between 250 and 400 feet, 700 and 800 feet, and 1,000 and 1,200 feet, with impervious material lying between these zones. When water was first obtained, the static level was 150 feet from the surface. It was found that if the water level should drop 63 feet, the 10-gauge pipe would collapse at about the 290-ft. level because of unequal hydrostatic pressure in the surrounding zones. (The limit of safety while using jacks on 10 gauge stove-pipe casing is 3,000 pounds psi.) If pipe does collapse, it is frequently possible to open the corridor with a pipe swedge.

Orlando . . .

(Continued from page 28)

feet, where 16-in. casing is placed with a combination cement and float shoe. Drilling is finished with a 15-in. bit. Then, inside cutters remove the 16-in. casing, except for a 20-ft. lap in the 20-in. casing. This allows the installation of an 18-in. turbine pump.

Sydnor tests the completed wells with a Fairbanks-Morse 18-in. single-stage pump driven by a GMC 350-hp twin 6-71 diesel engine unit operating at 2,200 rpm.

Three-stage, 20-in. Peerless turbine pumps are installed in the completed wells. Sydnor placed a subcontract for the permanent pumps with Industrial Pump Co., Tampa, Fla. The water-lubricated pumps have a ca-

pacity of 3,500 gpm when operating against a total dynamic head of 125 feet.

Norris calculated that each of the 36-Ls in a year's time, including moves, had drilled between 1,800 and 2,200 feet. Average daily footage drilled runs between five and ten feet, and as much as 15. Each rig carries a heavy set of tools on its Rochester wire rope, including a 10-ft. and a 20-ft. bar. A complete set of fishing tools is available.

"We've been pretty lucky on our fishing," said Norris. "The delays have been small." The month's effort at Well No. 11 was the longest fishing job.

The rigs are operated by John Mitchell, young (21) Roger Newton and Vires. Mitchell's rig on well No. 3, was in particularly tight quarters. His 50 x 100-ft. working area was surrounded by three houses, a commercial building and trees.

Newton's rig was bringing well No. 4 close to completion on the Park Lake Shore. It had drilled 1,162 feet in four months—1,100 feet of it in limestone.

Vires was battling the caving problem at Well No. 10 at the Kuhl Ave. water plant site. He had been there since October 1.

All bits are hard surfaced with Stoody rods. Sydnor's welder uses a General Electric 300 welding machine.

Rolled casing for the job was purchased from Richmond Engineering Co. Some 24 and 20-in. mill pipe, from Youngstown Sheet & Tube Co. and other mills, was used. More than 600 tons of casing in all will go into the wells.

Sydnor rented yard area in Orlando

(Continued on page 46)

Now You Can Stock and Sell

One Line of Water System Parts

Designed to give maximum efficiency and long, trouble-free service, Brady water system parts improve any water system. Stock and sell Brady parts . . . supply the best . . . reduce your inventory problems. Maximum discounts for stocking wholesalers mean added profits.

THE *Brady* LINE

Standard of industry available in all required sizes.

Only tanks engineered for domestic water systems—doubly resistant to corrosion.

Handle more water without choking—Three sizes available—"Water flows free as a waterfall."

For complete information and discounts, write

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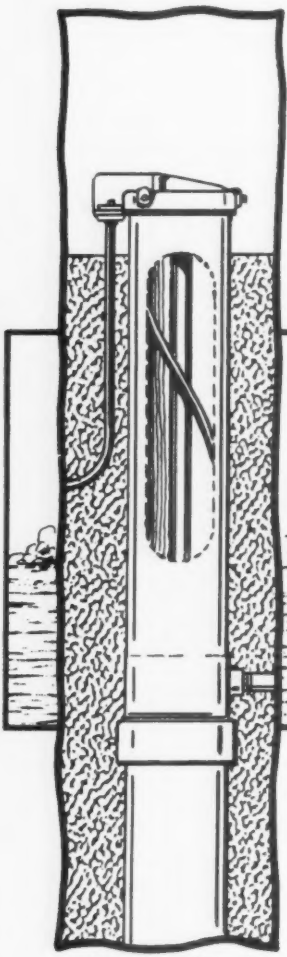
SANITARY PITLESS ADAPTER



CUT-AWAY VIEW of 4", 5", 6", 8", 12" and 20" grade-A submersible. 1" through 8" drop pipe and discharge fitted.

for your...

BETTER WATER SUPPLY

These units meet the most rigid state and federal codes, including Wisconsin, grade-A, providing true full-height well balanced installations. Styles available for suction shallow well, 1-pipe jet, 2-pipe jet and submersibles. Sizes range from 2" through 20" standard well casing, tapped for 1" through 8" drop pipe and horizontal discharge fittings.

Give your submersible installations the finest serviceability possible by using Tripar-Tubbs designed Sanitary Pitless Adapters. No need to ever have to "dig up" your jobs later for pump and motor repairing, or bleeder replacement or well screen cleaning. Inside well diameter is never reduced nor obstructed. Patented sanitary topside seal, with cable conduit box, included.

THE ACCENT'S ON *Simplicity* TRIPAR ENGINEERING DESIGNS

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WHITEWATER MANUFACTURING CO.
WHITEWATER, WISCONSIN

BARGAIN *counter*

All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: $1.00 per line. Minimum charge $4.00. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Closing date — 5th of preceding month. Example — January issue closes December 5th. Be sure to address separate inquiries to each advertiser by using the correct box numbers. Mail Box inquiries care of THE DRILLER, South Milwaukee, Wis.

DRILLS FOR SALE

50 Keystone. Mounted on Army GMC 6 x 6 truck. Complete with tools and lines for drilling 6" diameter wells. Can be seen in operation at any time. John Pierce & Sons, New Hampton, N. Y. Phone: Middletown, New York—DRexel 4-3352.

40 Cyclone in excellent condition, mounted on GMC truck, equipped with tools and lines for drilling 3" and 4" wells. Price: $2,500. H. A. Wilkens, Indian Hill rd., Toms River, N. J. Phone: 8-0394-J-2.

50 Keystone, mounted on 2½-ton Federal truck in good condition. New Allis-Chalmers drilling engine—has drilled two jobs.

240-Speedstar, mounted on GMC 1½-ton truck. Both machines available without drilling tools and lines. Priced reasonable. Harold Horton, Godeffroy, N. Y. Phone: Port Jervis 4-9679.

71 Star—1953 model, mounted on 2½ ton Mack truck. Machine equipped with casing reel, tool guide, blower, 40' derrick, power-raised and powered by newly rebuilt Red Seal Continental engine with starting equipment. Complete 6" tools and lines. Good condition throughout. Price: $4,000. Coventry Artesian Wells, Rt. #117, Coventry, R. I. Phone: EXpress 7-3926.

DRILLS FOR SALE

For Sale: 50 Keystone, A-1 condition, fully equipped with new 750' drill cable and tools for 6" and 8" work. Many extras, including test pump. Rig mounted on 50 GMC with 5-speed transmission and two-speed axle. Priced for quick sale to liquidate estate. '51 Chev. service truck also available. Call or write Lillian Ackerson, 77 MacDonald Drive, Wayne, N. J. Phone: Mountain View 8-2368.

1953 20-W with 500' of ⅝" new drill line and 500' of ⅜" new sand line. Mounted on 1949 Ford truck. Machine and truck ready to go. Contact Wilson Pipe & Supply Co., Inc., 13400 W. Carmen Ave., Butler 18, Wis.

60-L Bucyrus-Erie, purchased new July 1957. Powered with International diesel power unit and mounted on good 1953 2½-ton International truck. Available with or without drilling tools and lines. Eastern Drilling Company, 79 West Street, Warwick, N.Y. Phone: 55-4127.

Keystone 40, 1950 model, mounted on 6 x 6 GMC truck. Derrick equipped with rubber shock absorber head. Price complete, including tools and lines for drilling 6" wells, $2,500. Mr. J. L. Woodburn, Budd Lake, N. J. Phone: NEtcong 2-1388.

20-W, B-E mounted on Intern'l truck. Drill equipped with starting equipment, tool guide, casing reel and blower. Can be purchased with or without complete tools and lines for drilling 6" diam. wells. Priced reasonably. Phil Travis, 24 Atlantic St., Trenton, N. J.

20-W Bucyrus-Erie, purchased new in 1956. Mounted on 1949 KB-5 International. Drill equipped with cables, blower, tool guide and casing reel. Some tools—bumper, 4½ x 16 bailer, wrenches and chain bar. $4,500. Write: Dow Drilling Co., 50 Timson St., Lynn, Mass. Phone: LY 8-8816.

20-W Bucyrus-Erie. Mounted on Diamond-T truck. Bargain price—less tools and lines—$2,800. Located in New Jersey. Box 729.

Keystone 50, tools and truck good condition. Contact Quentin Richey, Harrisburg, Ill. Phone: Clearbrook 3-2733.

DRILLS FOR SALE

1—1954 model 22-W drill mounted on a 1950 Chevrolet truck. Casing reel, spooling device, power derrick hoist. This machine has been cleaned and painted and is in A-1 shape. No lines or tools. Price: $4,995.00 cash at Jacksonville, Ill.

1—1954 model 22-W drill mounted on a Studebaker truck. Casing reel, spooling device and power derrick hoist, and the following tools: 1—18' drill stem, rope socket, tool wrenches, bar and chain tightener, 2—6" bits, 600' of drill line, 600' of sand line and casing reel line. Price: $4,875.00 cash at Jacksonville, Ill.

1—1954 model 22-W drill mounted on a 1946 International truck. Casing reel, spooling device and Bucyrus-Erie power derrick hoist. The Waukesha motor has been overhauled. Truck and drill newly painted. No lines or tools. Price: $3,500.00 cash at Jacksonville, Ill.

1—1955 model 20-W drill mounted on a 1947 Ford truck. Casing reel, spooling device and power derrick hoist. Drill motor has been completely rebuilt. Drill has been cleaned and painted and is in A-1 shape. Price: $3,995.00 cash at Jacksonville, Ill.

New Bucyrus-Erie 20-W drill, complete with 700' of ⅝" drill line, 700' of ⅜" sand line and 130' of casing line. Mounted on a 1951 Dodge truck. Contact R. R. Long Co. or L. J. Kessler, Troy, Missouri.

1—1955 model 60-L drill, 2 International winch trucks, 3 strings of drilling and fishing tools, 3000' of ¾" drill line and 1000' of sand lines. Tool shed and many miscellaneous items too numerous to mention. This is a complete oil field outfit. Price: $20,000.00. Contact R. R. Long Co. or S. & S. Oil Co., Springfield, Ill.

1—V4 Wisconsin engine with pulley. In good condition. Price: $100.00.

1—21-W jackshaft complete with clutch and friction pulley. Price: $85.00.

Mr. Glenn Peterson, R. R. Long Co., R. R. 1, Mound Road, Jacksonville, Ill.

Old Star drill rig with 6-cyl. Hercules engine, good shape, 34' steel hand-raised mast, mounted on 1950 Diamond T truck, over 1000' of each cable, 4" and 5⅝" tools. $1500.00. C. Reznik Co., Rd. 38, Rt. 1, Brunswick, Ohio.

24-L Bucyrus-Erie, truck mounted. For information call Virdell Drilling Co., Llano, Texas 347-W.

DRILLS FOR SALE

1—20-W Bucyrus-Erie drill, purchased new in 1953. Machine equipped with tool guide, new engine, and lines. New bushings have been installed throughout, and machine repainted.

1—model 36-L Bucyrus-Erie drill, 1948 model equipped with Buda Diesel engine. Machine has been through shop, overhauled, and repainted.

1—21-W Bucyrus-Erie drill, mounted on good International truck. Machine equipped with folding braces and Le Roi engine. Both truck and machine in good condition.

1—model 240 Star drill, mounted on 1947 GMC truck. Drill has been run through shop, rebuilt and repainted. Truck in good condition.

1—1948 model 22-W Bucyrus-Erie drill. Machine on 1952 Chevrolet truck. Machine equipped with catheads, casing reel, and spooling device. Both truck and machine in good condition.

1—model 31 Stone, mounted on Chevrolet truck. Machine equipped with Le Roi engine, and tool guides. Machine and truck in good condition.

Contact: Buckeye Supply Company, P. O. Box 1231, Zanesville, Ohio.

1—Model 46 Cyclone equipped with six-cylinder 226 Continental engine. Machine is equipped with 50 ft. mast, casing reel, and is trailer mounted. Priced very reasonable. Contact: R. O. Grim, Homeworth, Ohio.

1—Model 38 Cyclone, like new in every respect, less than one year old, has done very little work. Complete with stem guide, casing reel, cushioned spudding sheave, steel catwalks. Has 40-ft. mast, Continental motor with transmission, starter, etc. Will sacrifice for quick sale. No truck or tools. Contact: Northeastern Drilling Co., Canfield, Ohio. Phone: LEnnox 3-4539.

1—Model 71 Speedstar mounted on GMC 4x4 truck with 500 ft. new ⅝" drilling line and 500 ft. new ⅜" sand line. Rig completely overhauled and painted, has new F-162 Continental motor and Bucyrus-Erie shock in top of mast. Priced for quick sale. Contact: Mr. Ray G. Scott, Route 5, Ravenna, Ohio. Phone: Ravenna AX 6-9119.

1—Model 40 Cyclone Water Well Drill. Machine is less than three years old, and has done very little work. Machine mounted on late model Studebaker ½-ton truck. Truck and machine both in excellent condition. Priced to sell. Contact: Mr. Howard Crowner, Moreland, Ohio.

DRILLS FOR SALE

21-W with tools, in good condition. Mounted on 1½-ton Dodge truck. Located in Arkansas. Price: $2,000. Write to Lion Oil Station, c/o Orvil Johnson, Pocahontas, Arkansas, or to Thomas Waddle, 3305 Lapey St., Rockford, Ill.

1947 Bucyrus-Erie 21-W drill mounted on 1948 Ford truck, both in A-1 condition. Equipped with catheads and catwalks, 400' ⅝" line, 600' ⅜" line. Price $2,200. Complete set tools, optional.

Bucyrus Armstrong 33-W, mounted on 1947 Federal truck. Both in A-1 condition. 400' ⅝" line, 600' ⅜" line, 16' stem—2x3 API, 5"-6"-8"-10" bits, wrenches and bailers. Price $2,600. Reinders Bros., Greattinger, Iowa. Phone: Nights 238-J or 187-L.

Bucyrus-Erie Model 28-L, spudder. This one has been thoroughly overhauled and new parts installed, including shock absorbers, sheave bushings, bearings and parts where needed. Rig has been steam-cleaned and painted. It is powered with a Caterpillar D-315 diesel engine (also overhauled). This drill is semi-trailer mounted—looks and runs like new. We have not spared any expense in overhauling it. Price f.o.b. our yard, $16,000. Casing tackle strut included. Drilling & Mining Equp. Co., 2020 Sacramento St., Los Angeles 21, Calif.

1-W, B-E; mounted on 1-ton Ford truck equipped with pump; drill suitable for both jetting and cable tool work. Price: $3,200. E. McGinnis & Sons, 502 New Jersey Ave., Absecon, N.J. Phone: PLeasantville 1949.

Stanolind Model 510 Rotary, 32' mast, 23' kelly, 600' drill pipe, 25' drill collar, 600-Gal. Griffin water tank. Assorted bits, subs tools, '51 Ford trucks —$5,500.00.

Mayhew 200, '55 Ford, 500-gal. Griffin tank, '54 Ford, 200' drill pipe, all tools, $5,000.00. Both rigs now working. C. L. Willis, 2226 Glengariff, Dallas, Tex. DA 7-2111.

21-W Bucyrus-Erie drill, mounted on truck and equipped with tools and lines for drilling 6" diameter wells. Price: $1,-800. Ackerman Well Drilling Co., 36 Ruff Court, No. Haledon, N.J. Phone: HAwthorne 7-0528.

1956 22-W, 36 hp. Hercules starter, casing reel, 700 ft. ¾" cable. 1951, 2-ton, 2-speed Ford. Both in excellent shape. Bob Beemer, Lakota, Iowa. Phone: 3131.

DRILLS FOR SALE

20-W Bucyrus-Erie Drill, about four years old, complete with casing reels, spooling device and electric starter. Propane equipped for real economy and excellent engine performance. 500' drill and sand lines and 4" string of tools with bailer. Price—$3,500.00. R. C. Hoover, West 33rd St., Zion, Ill. Phone: TRinity 2-3471.

24-L Bucyrus-Erie drilling rig, semi-trailer mounted, good 900x20 tires, casing reel, tool crane, 48' derrick, good paint, entire outfit in excellent condition. Priced right. Ready to go. Harry H. Fox, R. 6, Shelbyville, Ind. Phone: Waldron 4181.

1954 Bucyrus-Erie 22-W, truck-mounted, power hoist, catheads, rubber shocks, casing line, sand line, new drill line, complete list of tools. A-1 condition. Machine in Washington. Hatch Drilling Co., Tracy Inn Hotel, Tracy, Calif.

50 Keystone, excellent condition, in operation only 5 months. Mounted on R-170 International 1955 truck driven only 250 miles. Complete tools and lines for drilling 6" diameter wells. Price: $8,000. John Lauritsen, Change Bridge Road, Montville, N.J., CAldwell 6-3341.

1500 Failing, long mast and kelly, Franks and Mayhew 1000, long mast and kelly, Sullivan 27 working in Montana. $3,-750.00. Drill pipe, drill collars, pumps, 4½x6, 5x8. I am not a broker, what I offer for sale, I own. Fred Butler, Box 481, Pueblo, Colo.

22-W Bucyrus-Erie equipped with 6"-8" tools, cable bumper, fishing tools, 40' power boom, spooling device, catwalks, bailer, and extra tools. Mounted on GMC 6x6, also '56 ¾-ton pick-up. Peter Rochetti, RFD #3, Newburgh, N.Y. Call: Newburgh 2-5194.

2 Star 71 drills. One is a 1948 model #8767 mounted on 1938 Mack truck, the other a 1948 model #9079 mounted on 1948 White truck. Contact W. Calvin Falwell, 3732 Campbell Ave., Lynchburg, Va.

Model 240 Star, LeRoi engine, catheads, one-piece derrick. In A-1 condition, mounted on Chevrolet truck. Priced at $1750.00. Charles Frazee, 841 Euclid, Benton Harbor, Mich. Phone: WA. 5-2246.

33-W Bucyrus-Erie, complete with string of tools. Price $500.00. Contact Fred R. Castelluccio, Jones Point, N.Y. Phone: Stony Point 6-8779.

DRILLS FOR SALE

22-W Bucyrus-Erie purchased new in 1954. Mounted on good truck and drill is equipped with casing reel, spooling device, complete electric starting and tool guide. Complete drilling tools, fishing tools and lines for 6" and 8" work. Everything in A-1 condition, and priced to sell quickly. Harry Van Duynhoven, Montgomery, N. Y. Phone: 5-2242.

1954 Bucyrus-Erie 60-L, excellent condition, priced for quick sale. Mrs. R. F. Knapp, 2711 Northeast 23rd St., Pompano Beach, Fla.

MISCELLANEOUS FOR SALE

Complete string of big hole tools with 8"—10" and 12" bits. Joints 2½" x 3½"-7 API.

New: Universal Giant #101-AA clutch, shaft, sprockets, chain and drum.

Temper screw with clamps.

8" and 10" pipe with coupling. Reasonably priced. Alexander Blote, 13-14 River Road, Fair Lawn, N. J. Phone: SW 6-0570.

New pipe casing in stock: 3", 4", 6", 8", 10", 12". Reconditioned pipe casing in stock: 3", 4", 4½", 5", 6", 8", 10", 12". Cutting and threading facilities; attractive prices on request. H. Schwartz & Sons, 2235 North Bodine St., Phila., Pa., Garfield 6-6464.

Model 42-T, International, diesel-powered, crawler-mounted, complete with drilling and fishing tools for 9" holes. Good condition. Price: $5,000. Albert Meckes, Gilbert, Pa. Phone: OVerbrook 12663, Gilbert, Pa. (near Strodsburg, Pa.)

Spudders, rotaries, tools. Nation wide sales listings. If buying or selling contact Pressey & Son, P.O. Box 614, Pueblo, Colo.

One—No. 8 Bucyrus-Erie bit dresser with oil-fired furnaces, tempering vat, bit holders, crane, etc. Falwell Corporation, Box 937, 3732 Campbell Avenue, Lynchburg, Va.

Reo truck with air brakes, 600' new drilling cable. All new 6" tools, 2 rope sockets, drilling jars, fishing sockets, full circle, slip sockets, engine overhauled in April this year. Ready to go to work. Sene Papolas, Box 453, Waterville, Maine.

MISCELLANEOUS FOR SALE

Pipe threading machine, heavy-duty, 7 sets of 4" to 10" dies, independent chuck, 3 hp motor, good condition, $675. The Hagmann Company, P. O. Box 505, Vienna, Va.

HP-217 Buda Motor, complete, as supplied by Bucyrus-Erie on 22-W, major overhaul, new radiator. A & B Drilling, Box 182, Scobey, Mont.

WELL BUSINESS FOR SALE

Established drilling business and equipment for sale, including one 20-W Bucyrus-Erie, 1955 model. Mounted on good Dodge truck. Drill equipped with casing reel, spooling device, tool guide, starting equipment and complete tools and lines for drilling 6" wells. Also good ½-ton Chev. pick-up truck. Willing to sell at reasonable price because of ill health. Jack Angelo, 99 Dutchess Terrace, Beacon, N.Y. Phone: BEacon 2009.

50 Keystone, fully equipped, have enough work for 2 rigs, $10 per foot. Full time payment with good backer. A. J. LaBier, Pottersville, N.Y.

HELP WANTED

Two drillers thoroughly experienced on 6" and 8" work. New Bucyrus-Erie cable tool machines. Year around work. Wages, union scale and a bonus. Contact L. L. May, 818 Michigan Ave., South Milwaukee, Wis. Phone: SOuth 2-3387.

Experienced, reliable cable tool driller, rock and screen work. Stewart Bros., Inc., P.O. Box 976, Schenectady, N.Y.

HELP WANTED

Sales Engr. for well and pump business. Previous experience necessary. USGS experience preferred. Large municipal and industrial accounts in NW area. Income to $12,000. All inquiries confidential. Box 731.

Experienced, reliable well driller to work on 22-W Bucyrus-Erie well drilling machine. Contact Fred A. Castelluccio, Jones Point, N.Y. Phone: Stony Point 6-8779.

Single man for pump repair, some light cable tool drilling, welding and machine shop experience. Geo. E. Eggett, Box 122 Englewood, Fla.

EQUIPMENT WANTED

Power pipe threading machine up to three or four inch. State condition. Geo. E. Eggett, Box 122, Englewood, Fla.

POSITION WANTED

Cable tool driller wants work in some foreign country. Prefer South America or Mexico. 54 years old. 30 years' actual experience in oil, gas, water and mine holes and pumps. 5 years Civil Service driller for U.S. Government and 16 years contractor shallow holes, oil and water. Can handle most anything in this line. C. M. Conway, 675 Barclay St., Craig, Colo.

Driller, 40 years' experience, available for foreign service as foreman-instructor-supervisor. Several years' experience in Turkey. Write Niels Hornum, General Delivery, Everett, Wash.

Experienced cable tool driller desires position with reliable company. Can furnish excellent references. Age 37. Box 732.

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Orlando . . .

(Continued from page 41)

from Leonard Bros. Transfer to store casing, a logging unit, cement pumper, tools and the 24-L. Sydnor's turbo-diesel White tractor-trailer unit hauls equipment and materials from the home base at Richmond. Also on the job are two GMC trucks—a pickup and a two-ton hauler—and a GMC tractor-trailer unit.

The 24-L has been busy on outside jobs in and near Orlando. Averaging 20 to 25 feet per day, it put down a 1,300-ft. golf course well. The well started out as a 20-in. diameter, with reductions to 16, 12 and 8 inches. More recently, the 24-L was assigned to the Florida Road Dept. to drill an 18-in. drain well on Lower Little Lake Fairview. This well was to be about 400 feet deep. Norris also used the 24-L to set three pumps.

The cement bases which Sydnor builds for the above-ground pump installations are 36 inches high, with a top width of 48 inches and a bottom width of 62 inches. A 1-in. steel base plate is placed under the pump.

Orlando is building two new above-ground reservoirs to handle the new water supply. Capacity of one of the reservoirs will be two million gallons. The other will have a capacity of one million gallons. Already existing are a 1½ million-gallon underground reservoir and two above-ground reservoirs with a capacity of 2 million gallons each. More than 460 miles of pipe make up the old and the new system.

C. H. Stanton is general manager, Orlando Utilities Commission; L. L. Garrett is manager of the water department. Mel Trieste is resident engineer for Black & Associates.

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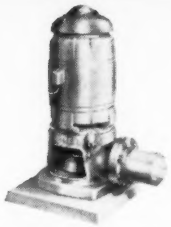
TURBINES



VERTICAL TURBINES: Wide range of sizes – 4" to 24" models. Capacities to 10,000 GPM. 1½ to 250 HP.

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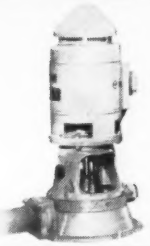

COMBINATION TURBINES: Can flood irrigate and maintain pressure system at same time. Sizes 4" to 8". 10 to 600 GPM.

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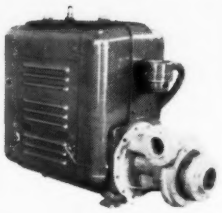
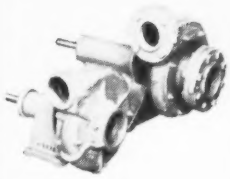


ENGINE DRIVE: Pumps are direct-connected to air-or-water-cooled engines. Capacities to 3500 GPM. Heads to 150 PSI.

Ask for Sprinkler Pump Data



BELT DRIVE: Pumps are mounted on ball-bearing brackets. Capacities to 4000 GPM. Heads to 180 PSI.

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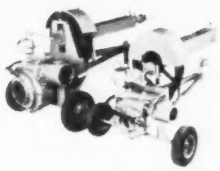

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This Bucyrus-Erie 28-L, owned by David B. Graham of Phoenix, Ariz., is down 816 feet in sand and shale on a well being drilled for Hildebrand & McCarthy, Eloy, Ariz. Graham expected the well, which was started at 20-in. diameter and later reduced to 17½ inches, to be completed at 1,700 feet.

The Driller

The monthly magazine for water well drillers

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